ABSTRACT OF THE DISCLOSURE

A method and apparatus for generating three-dimensional shape data in analytic surface expression form by using polygonal shape data. In the polygonal shape data, at least a portion of a shape is
5   approximated by a combination of a plurality of polygons. A set of polygons is generated from the polygonal shape data, each of the polygons satisfying a predetermined selection criterion. An analytic surface is fitted in place of the obtained set of polygons. The step of fitting is repeated by obtaining another set of polygons
10   until a predetermined termination condition is satisfied.